From sensor networks to connected analysis tools

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Multi-disciplinary data systems provide excellent tools for locating data, but most eventually provide a series
of local files for further processing, providing marginal advantages for the regular user. The Swiss Experiment
Platform (SwissEx) was built with the primary goal of enabling high density measurements, integrating them with
lower density existing measurements and encouraging cross/inter-disciplinary collaborations. Nearing the end of
the project, we have exceeded these goals, also providing connected tools for direct data access from analysis
applications.

SwissEx (www.swiss-experiment.ch) provides self-organising networks for rapid deployment and integrates
these data with existing measurements from across environmental research. The data are categorised and
documented according to their originating experiments and fieldsites as well as being searchable globally. Data
from SwissEx are available for download, but we also provide tools to directly access data from within common
scientific applications (Matlab, LabView, R) and numerical models such as Alpine3D (using a data acquisition
plugin and preprocessing library, MeteoIO).

The continuation project (the Swiss Environmental Data and Knowledge Platform) will aim to continue the
ideas developed within SwissEx and (alongside cloud enablement and standardisation) work on the development
of these tools for application specific tasks. We will work alongside several projects from a wide range of
disciplines to help them to develop tools which either require real-time data, or large data samples. As well as
developing domain specific tools, we will also be working on tools for the utilisation of the latest knowledge in
data control, trend analysis, spatio-temporal statistics and downscaling (developed within the CCES Extremes
project), which will be a particularly interesting application when combined with the large range of measurements
already held in the system. This presentation will look at the applications and web services developed so far as
well as to be developed in the future.